



California
**Department of
Conservation**

Conduit Evaluation Approach

Conduit Evaluation - Problem Wells Identification



- **Problem wells**

- All the operator identified problem wells will be checked with the focus on operator's remediation proposal.

- **Non-Problem wells**

- For Idle & Plugged well count less than 100, CalGEM will validate Minimum 10 wells **or** 20% of 100 wells. Wells will be randomly selected for review.
- For Idle & Plugged well count more than 100, CalGEM will validate 10% of the wells. Wells will be randomly selected for review.
- Validation will include in-depth analysis of WBD, cement calculation, BFW/USDW determination etc. and cross-checking the operator evaluation for accuracy.
- If validation shows operator evaluation is correct –
 - CalGEM will perform the high-level evaluation of remaining non-problem wells. High level evaluation will include checking WBD, and cement calculation submitted by operator.
- If validation shows operator evaluation is not correct –
 - CalGEM will ask operator to provide the revised/corrected evaluation.
 - CalGEM will then review again in-depth a certain percentage (~5%) of wells for accuracy.
 - CalGEM will perform the high-level evaluation of remaining non-problem wells.

Conduit Evaluation – Problem Wells Remediation and Monitoring



General Approach

- Problem wells identified inside an AOR need to be remediated. Problem wells identified outside an AOR need to be monitored.
- Operator will submit the remediation/monitoring plan for CalGEM and WB review.
- After CalGEM & WB concurrence, the operator will implement the remediation/monitoring plan.
- The required remediation and monitoring approach to identified problem wells was communicated to operators at the start of conduit evaluation process in Nov 2021.

Remediation Approach for Problem wells identified inside an AOR

- Plugged problem wells need to be re-plugged and abandoned.
- Idle problem wells need to be plugged and abandoned.
- Operator will submit a remediation plan and schedule. The schedule will include integration with Idle well management plan.

Conduit Evaluation – Problem Wells Remediation and Monitoring



Remediation/Monitoring Approach for Problem wells identified outside the AOR

- If problem wells are owned by the operator i.e., part of AE application
 - Plugged & Idle problem wells need to be monitored. Operator needs to submit a monitoring plan.
 - If plugged wells are identified as problem wells but there is no idle well to support monitoring, CalGEM/WB can propose other alternatives to monitoring.
 - Problem wells monitoring plan will include integration with existing monitoring plan for UIC projects in the AE area, when possible. The existing plans may already have the monitoring conditions that prevents the contamination of BFW and USDW. The identified problem wells can be assigned the same monitoring conditions.
 - There may be instances where CalGEM/Water Boards may want to move forward with remediation of high-risk problem wells. This would be evaluated on a case-by case-basis. Although monitoring will be the dominant approach.
- If problem wells are owned by the operator i.e., not part of AE application
 - If an operator proposes a UIC project in the future and identified problem wells are within the project area, operator needs to submit a remediation/monitoring plan for CalGEM and WB approval.
- For Orphan wells
 - CalGEM will put these wells on the Orphan well list for abandonment. The orphan wells to be P&A'd are prioritized based on CCR 1772.4 (<https://www.law.cornell.edu/regulations/california/Cal-Code-Regs-Tit-14-SS-1772-4>) and CalEnviroScreen (<https://oehha.ca.gov/calenviroscreen>) for disadvantaged communities.

Conduit Evaluation – Problem Wells Remediation and Monitoring



Meetings with Operators

- The remediation/monitoring approach to identified problem wells was communicated to operators at the start of conduit evaluation process in Nov 2021.
- CalGEM and WB will meet with operators of MWSS and Kern River AEs in July 2022 to communicate regarding identified problem wells and guidance regarding remediation/monitoring Plan.
- Guidance regarding remediation/monitoring plan will include:
 - Remediation and monitoring approach shared on previous slides.
 - Use of existing Idle well management plan and UIC monitoring plan.
 - AERA's South Belridge monitoring plan will be shared with operator. This monitoring plan can be used by the operator as reference with the flexibility to choose whatever specifically applies to monitoring problem wells in the AE areas.
 - Operator need to include problem well-specific monitoring requirements that may include pressure monitoring, temperature monitoring, water quality sampling, etc.

Gantt Chart - Problem Wells identification



Conduit Evaluation Gantt Chart														
Problem well Identification & Remediation/Monitoring Plan	Nov-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23
Meeting with Operators														
NWSS - Idle and Plugged wells review. Data submission to CalDEM														
NWSS - CalDEM Review														
NWSS - WaterBoard Review														
Meeting with Operators to discuss identified problem wells														
Operator submits the remediation/monitoring plan														
CalDEM/WB review and concur with operator's remediation/monitoring plan														
Kern River - Idle and Plugged wells review. Data submission to CalDEM														
Kern River - CalDEM Review														
Kern River - WaterBoard Review														
Meeting with Operators to discuss identified problem wells														
Operator submits the remediation/monitoring plan														
CalDEM/WB review and concur with operator's remediation/monitoring plan														
Cat Canyon - Idle and Plugged wells review. Data submission to CalDEM														
Cat Canyon - CalDEM Review														
Cat Canyon - WaterBoard Review														
Meeting with Operators to discuss identified problem wells														
Operator submits the remediation/monitoring plan														
CalDEM/WB review and concur with operator's remediation/monitoring plan														

Gantt Chart – Problem Wells Remediation and Monitoring



AE	Operator Name	Total	Problem wells in AOR			Problem wells outside AOR			Problem wells in AOR	Problem wells in AOR	Expected
		Wells	Idle	P&A	Total	Idle	P&A	Total	Estimated remediation, days	Estimated remediation, month	completion date
MWSS	AERA, Berry, CRC, Chevron, Holmes western, Peneca, Sentinel Peak	126	0	10	10	3	77	80	100	~4	Apr 2023
Kern River	Chevron	78	4	12	16	0	0	0	160	~5	May 2023
Cat Canyon*	AERA, B.E. Conway, CRC, Cat canyon resources, Miocene operating, Team operating, Vaquero	440	27*	1*	28*	6*	54*	60*	280	~10	Oct 2023
Holser	Carbon California	0	0	0	0	0	0	0	0	0	Dec 2021
Mount Poso	Out of non-compliance AE list	5				1	1	1	1	~1	Jan 2023
Oxnard	Out of non-compliance AE list	97									

* For Cat Canyon, problem wells count is estimated numbers.
Expected completion date is for remediation.

APPENDIX

CCR 1772.4



When proposing a Testing Compliance Work Plan under Section 1772.1.4, a Testing Waiver Plan under Section 1772.2, or an Idle Well Management Plan under Public Resources Code section 3206, subdivision (a)(2), the operator shall consider all of the following when prioritizing idle wells for testing or plugging and abandonment:

- (1) Whether the idle well is a critical well, in an urban area, or has an environmentally sensitive wellhead;
- (2) Whether the idle well is located in an area of known geologic hazard, such as subsidence, landslides, or a history of damage to wells in the area from seismicity;
- (3) Whether the idle well has pressure in the casing or tubing at the surface, and whether the well is open to the atmosphere;
- (4) Whether the idle well has surface obstacles or other impediments preventing access to the wellhead, including but not limited to buildings or structures, surface-use activities, irrigation systems, roads, terrain, or restricted access;
- (5) Whether the idle well has known downhole issues that would make it difficult to either reactivate the well or plug and abandon the well, such as known holes in casing, collapsed casing, stuck rods, packer, or fish;
- (6) Whether the fluid level in the idle well is above the base of freshwater;
- (7) Whether the fluid level in the idle well is above the base of a USDW;
- (8) The age of the idle well;
- (9) Any other indications that the idle well potentially poses a threat to life, health, property, or natural resources; and
- (10) Operational or economic efficiencies that may be achieved by ordering work in a particular manner.